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PROGRESS REPORT

For

AUTOMATIC STEREO CORRELATOR

SC 1305

"Construction of Breadboard System of an Automatic
Stereo Correlator and Evaluation of the Performance Capabilities
of such a System."

Period Covered: December 1964 – January 1965

Date: 19 January 1965

Job No.:   SC 1305

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This is the fifth monthly progress report.

TASK OBJECTIVE

To manufacture a breadboard and to conduct sufficient tests to determine the performance capabilities inherent in a system of automatic stereo correlation as described in the 552 MSC proposal.

CURRENT STATUS OF WORK

Electronic

1) System tests using a simple stereo pair have begun. The use of a rudimentary target consisting of a hole, at this stage facilitates the analysis of results.

2) Necessary minor changes in circuit design to accommodate optical input signals have been made.

3) The effects of poor stereo correlation of a single image on the output signal have been readily observed in system tests using one pair of X channel slits and observing the DC output' signal at the input to the X channel servo amplifier.

4) Electrical debugging of the X, Y, θ and M channels is being accomplished.

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Opto-Mechanical

1)   Adjustment of a pair of scan wheel slits has been made.

2)   Optical alignment to permit visual and photomultiplier imaging of stereo targets has been accomplished.

PROBLEM AREAS ENCOUNTERED

1)   It was found that additional filtering of the scan motor circuit was necessary.

2)   Larger than anticipated photomultiplier signals made it necessary to reduce some amplifier gains.

3)   Some changes in circuit time constants were found necessary with optical input signals.

DOCUMENTATION OF VERBAL COMMITMENTS AND/OR AGREEMENTS

None have been made.

PROJECTED WORK FOR NEXT PERIOD

Completion of the project, consisting of:

1)   Connect servo drives to electronic assemblies.

2)   Check servo performance and establish basic operating parameters of servo drives.

3)   Integrate servoed functions (X, Y, Θ, M), one at a time, and evaluate interactions.

4)   Evaluate total system performance, and write final report.

5)   Update drawings for record purposes.

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SCHEDULE

An evaluation of the above program leads to a conclusion that some delay in completion of the project must be anticipated. The exact amount of delay cannot be accurately predicted until system integration is started and the magnitude of any resulting problems can be assessed.